

CLAIMS

1. A printing apparatus comprising:

detection means that is capable of moving and that is for
5 detecting a medium to be printed; and

carrying means for carrying the medium to be printed in a
direction that intersects a movement direction of said detection
means;

said printing apparatus

10 causing said detection means to be positioned on one side
in said movement direction;

causing said carrying means to carry said medium to be
printed in a predetermined direction up to a detection position
where said detection means detects said medium to be printed; and

15 when an upper end, among an upper right end and an upper
left end of said medium to be printed, that is on a side opposite
from a side where said detection means is positioned is leading
by at least a set amount at said detection position, causing said
detection means to be positioned on the other side that is opposite
20 from the one side in said movement direction, then causing said
carrying means to carry said medium to be printed from said
detection position in a direction opposite from said
predetermined direction, then causing said medium to be printed
to be carried in said predetermined direction up to the detection
25 position where said detection means detects said medium to be
printed, and then causing said medium to be printed to be carried
by a predetermined amount in said predetermined direction from
said detection position.

30 2. A printing apparatus according to claim 1,

wherein when an upper end, among the upper right end and the upper left end of said medium to be printed, that is on the side where said detection means is positioned is leading at said detection position, said medium to be printed is carried by said carrying means in said predetermined direction from said detection position by said predetermined amount.

3. A printing apparatus according to claim 2,

wherein when the upper end, among the upper right end and the upper left end of said medium to be printed, that is on the side opposite from the side where said detection means is positioned is leading by less than said set amount at said detection position, said medium to be printed is carried by said carrying means in said predetermined direction from said detection position by said predetermined amount.

4. A printing apparatus according to claim 1, comprising:

a print head for printing on said medium to be printed by ejecting ink as said print head moves in a main-scanning direction that intersects the carrying direction in which said medium to be printed is carried.

5. A printing apparatus according to claim 4,

wherein said detection means is provided together with said print head in/on a moving member for moving in said main-scanning direction.

6. A printing apparatus according to claim 1,

wherein the upper end, among the upper right end and the upper left end of said medium to be printed, that is leading at

said detection position is found by detecting whether or not said medium to be printed is present by moving said detection means from the one side to the other side in said movement direction after carrying said medium to be printed in said predetermined direction up to said detection position where said detection means positioned on the one side in said movement direction detects said medium to be printed.

7. A printing apparatus according to claim 6,

10. wherein it is made difficult for said detection means to detect said medium to be printed when said detection means is moved from the one side to the other side in said movement direction.

8. A printing apparatus according to claim 7,

15. wherein, in the process of moving said detection means from the one side to the other side in said movement direction,

if said detection means does not detect said medium to be printed, then it is assumed that the upper end, among the upper right end and the upper left end of said medium to be printed, that is on said one side in said movement direction of said detection means is leading at said detection position, or that the upper end, among the upper right end and the upper left end of said medium to be printed, that is on said other side in said movement direction of said detection means is leading by less than the set amount, and

if said detection means detects said medium to be printed, then it is assumed that the upper end, among the upper right end and the upper left end of said medium to be printed, that is on said other side in said movement

direction of said detection means is leading by at least the set amount.

9. A printing apparatus according to claim 1,

5 wherein said detection means has a light-emitting member for emitting light and a light-receiving member for receiving the light that is emitted by said light-emitting member, and detects said medium to be printed based on an output value of said light-receiving member.

10

10. A printing apparatus according to claim 3,

wherein said print head performs printing with respect to an entire surface of said medium to be printed.

15 11. A printing apparatus comprising:

detection means that is capable of moving and that is for detecting a medium to be printed; and

carrying means for carrying the medium to be printed in a direction that intersects a movement direction of said detection

20 means;

said printing apparatus

causing said detection means to be positioned on one side in said movement direction;

25 causing said carrying means to carry said medium to be printed in a predetermined direction up to a detection position where said detection means detects said medium to be printed;

when an upper end, among an upper right end and an upper left end of said medium to be printed, that is on a side where said detection means is positioned is leading at said detection
30 position, causing said medium to be printed to be carried by said

carrying means in said predetermined direction from said detection position by a predetermined amount;

when an upper end, among the upper right end and the upper left end of said medium to be printed, that is on a side opposite
5 from the side where said detection means is positioned is leading by at least a set amount at said detection position, causing said detection means to be positioned on the other side that is opposite from the one side in said movement direction, then causing said carrying means to carry said medium to be printed from said
10 detection position in a direction opposite from said predetermined direction, then causing said medium to be printed to be carried in said predetermined direction up to the detection position where said detection means detects said medium to be printed, and then causing said medium to be printed to be carried
15 by said predetermined amount in said predetermined direction from said detection position;

when the upper end, among the upper right end and the upper left end of said medium to be printed, that is on the side opposite from the side where said detection means is positioned is leading
20 by less than said set amount at said detection position, causing said medium to be printed to be carried by said carrying means in said predetermined direction from said detection position by said predetermined amount;

printing on said medium to be printed by causing a print
25 head to eject ink as said print head moves in a main-scanning direction that intersects the carrying direction in which said medium to be printed is carried;

being provided with said detection means and said print head both in/on a moving member for moving in said main-scanning
30 direction;

finding the upper end, among the upper right end and the upper left end of said medium to be printed, that is leading at said detection position by detecting whether or not said medium to be printed is present by moving said detection means from the one side to the other side in said movement direction after carrying said medium to be printed in said predetermined direction up to said detection position where said detection means positioned on the one side in said movement direction detects said medium to be printed;

when said detection means is moved from the one side to the other side in said movement direction, making it difficult for said detection means to detect said medium to be printed so that

if said detection means does not detect said medium to be printed, then it is assumed that the upper end, among the upper right end and the upper left end of said medium to be printed, that is on said one side in said movement direction of said detection means is leading at said detection position, or that the upper end, among the upper right end and the upper left end of said medium to be printed, that is on said other side in said movement direction of said detection means is leading by less than the set amount, and

if said detection means detects said medium to be printed, then it is assumed that the upper end, among the upper right end and the upper left end of said medium to be printed, that is on said other side in said movement direction of said detection means is leading by at least the set amount; and

performing printing with respect to an entire surface of said medium to be printed.

12. A printing method for a printing apparatus provided with a sensor that is capable of moving and that is for detecting a medium to be printed, and a carry roller for carrying the medium to be printed in a direction that intersects a movement direction of said sensor, said printing method comprising:

a step of causing said sensor to be positioned on one side in said movement direction;

a step of causing said carry roller to carry said medium to be printed in a predetermined direction up to a detection position where said sensor detects said medium to be printed; and

a step of, when an upper end, among an upper right end and an upper left end of said medium to be printed, that is on a side opposite from a side where said sensor is positioned is leading by at least a set amount at said detection position, causing said sensor to be positioned on the other side that is opposite from the one side in said movement direction, then causing said carry roller to carry said medium to be printed from said detection position in a direction opposite from said predetermined direction, then causing said medium to be printed to be carried in said predetermined direction up to the detection position where said sensor detects said medium to be printed, and then causing said medium to be printed to be carried by a predetermined amount in said predetermined direction from said detection position.

25

13. A program for causing a printing apparatus provided with detection means that is capable of moving and that is for detecting a medium to be printed, and carrying means for carrying the medium to be printed in a direction that intersects a movement direction of said detection means, to achieve:

30

a function of causing said detection means to be positioned on one side in said movement direction;

a function of causing said carrying means to carry said medium to be printed in a predetermined direction up to a detection
5 position where said detection means detects said medium to be printed; and

a function of, when an upper end, among an upper right end and an upper left end of said medium to be printed, that is on a side opposite from a side where said detection means is
10 positioned is leading by at least a set amount at said detection position, causing said detection means to be positioned on the other side that is opposite from the one side in said movement direction, then causing said carrying means to carry said medium to be printed from said detection position in a direction opposite
15 from said predetermined direction, then causing said medium to be printed to be carried in said predetermined direction up to the detection position where said detection means detects said medium to be printed, and then causing said medium to be printed to be carried by a predetermined amount in said predetermined
20 direction from said detection position.

14. A computer system comprising:

a printing apparatus provided with detection means that is capable of moving and that is for detecting a medium to be printed,
25 and carrying means for carrying the medium to be printed in a direction that intersects a movement direction of said detection means; and

a main computer unit that is connected to said printing apparatus;

30 said computer system

causing said detection means to be positioned on one side in said movement direction;

causing said carrying means to carry said medium to be printed in a predetermined direction up to a detection position
5 where said detection means detects said medium to be printed; and

when an upper end, among an upper right end and an upper left end of said medium to be printed, that is on a side opposite from a side where said detection means is positioned is leading by at least a set amount at said detection position, causing said
10 detection means to be positioned on the other side that is opposite from the one side in said movement direction, then causing said carrying means to carry said medium to be printed from said detection position in a direction opposite from said predetermined direction, then causing said medium to be printed
15 to be carried in said predetermined direction up to the detection position where said detection means detects said medium to be printed, and then causing said medium to be printed to be carried by a predetermined amount in said predetermined direction from said detection position.

20

15. A printing apparatus comprising:

a sensor that is capable of moving and that is for detecting a medium to be printed; and

a carry roller for carrying the medium to be printed in a
25 direction that intersects a movement direction of said sensor;
said printing apparatus

causing said sensor to be positioned on one side in said movement direction;

causing said carry roller to carry said medium to be printed
30 in a predetermined direction up to a detection position where said

sensor detects said medium to be printed; and

when an upper end, among an upper right end and an upper left end of said medium to be printed, that is on a side opposite from a side where said sensor is positioned is leading by at least
5 a set amount at said detection position, causing said sensor to be positioned on the other side that is opposite from the one side in said movement direction, then causing said carry roller to carry said medium to be printed from said detection position in a direction opposite from said predetermined direction, then
10 causing said medium to be printed to be carried in said predetermined direction up to the detection position where said sensor detects said medium to be printed, and then causing said medium to be printed to be carried by a predetermined amount in said predetermined direction from said detection position.